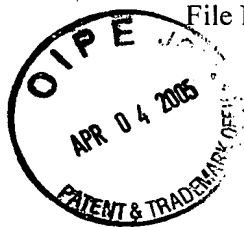


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File No.: 12676-15US-1US KPM/en

Montréal, Canada

April 1, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Trichromatic Carpet Inc.
Patent No.: 6,814,881
Issued: November 9, 2004
Title: POLYAMIDE FIBER SUBSTRATE HAVING STAIN
RESISTANCE, COMPOSITION AND METHOD

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
U.S.A.

**REQUEST FOR CERTIFICATE OF CORRECTION
UNDER 37 CFR 1.323 AND 35 USC 255**

Sir:

The Patentee hereby respectfully requests that the Commissioner of Patents issue a Certificate of Correction for the above-identified Patent in accordance with the accompanying form PTO/SB/44 submitted herewith, in duplicate.

The number designation "3,3-" at column 12, line 24, which is in claim 4, line 2, is a result of a typographical error in the original claims. The correct designation is ... 4,4- ... as at column 12, line 21 and as shown in the Patent at, for example, column 3, lines 43 to 45, column 3, lines 65 to 66; column 4, lines 1 to 2 and column 4, line 34.

The ... 4,4- ... designations are clearly shown in the disclosure including the formulae at columns 3 and 4 and there is no showing of a "3,3-" compound.

Attached is a copy of column 12 of the Patent identifying the correction required in red ink.

Accordingly, it is requested that the Certificate of Correction be issued under 35 CFR 1.323 and 35 USC 255.

The Commissioner is authorized to withdraw the Government fee of \$100.00 for the Certificate of Correction from our Deposit Account No. 19-5113.

Assistant Commissioner for Patents

Patent No. 6,551,451

Early issue of the Certificate of Correction would be appreciated.

Respectfully submitted,

Trichromatic Carpet Inc.

By:

April 1, 2005

Date



Kevin P. MURPHY (Reg. No. 26,674)

Agent of Record

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Enclosures: As Above

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 6,814,881

DATED : November 9, 2004

INVENTOR(S) : Yassin M. Elgarhy

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 12, line 24, substitute ... 4,4- ... for "3,3-"

MAILING ADDRESS OF SENDER:

OGILVY RENAULT
1600-1981 McGill College Avenue
Montreal, Quebec, Canada H3A 2Y3

PATENT NO. 6,814,881

No. of additional copies



This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Product	IS	WS	ID	LD
SAMPLE #11	7	6	3-4	3-4
SAMPLE #12	7	6	4-5	4-5
SAMPLE #13	7	6	3	3
SAMPLE #14	7	6	4	4
SAMPLE #15	6	4	5	5
SAMPLE #16	7	6-7	5	5
SAMPLE #17	<3	<1	5	5
SAMPLE #18	7-8	6-7	5	5
SAMPLE #19	8	6-7	4-5	4-5
SAMPLE #20	<5	<4	5	5

Conclusion

The results in Table #1 and Table #2 of stain resist on Nylon 66 and Nylon 6 show the following:

1. Best results of stainblockers with wash durability treated with acrylic resin alone are obtained from Polymer A and Polymer B of this invention.
2. The low molecular weight methacrylic acid polymer has acceptable effect on the initial staining but it easily removed in alkaline wash.
3. The poly acrylic acid polymer alone has a very little effect or no effect as stain blocker.
4. The bleached condensation product #C of this invention produces best results as stain blocker initially and after alkaline wash alone or in combination with Polymer A in all the examples of this invention on Nylon 66 beside the improved light fastness.
5. Optimum results for initial staining, durability to alkaline wash, and light fastness were obtained by the synergetic effect of the Polymer A and the bleached Condensation Product #C or D.

In this Specification, unless indicated otherwise amounts in parts or by % are by weight.

While the invention has been particularly described by reference to a fibrous polyamide substrate, it applies equally to a wool substrate for the application of the condensation products.

It will be recognized that various modifications and alterations of the invention will be apparent to those skilled in the art without departure from the scope and spirit of the invention and that the invention is not restricted by the details and examples set forth for illustrative purposes.

I claim:

1. An aqueous formulation for providing resistance to staining by acid colorants in a fibrous polyamide substrate comprising in an aqueous vehicle:

- a) a semi-bleached to bleached sulfonated aromatic condensation resin, said resin being selected from the group consisting of condensation products of

i) phenolsulfonic acid, dihydroxydiphenyl sulfone and an aldehyde;

ii) sulfonated dihydroxydiphenylsulfone, dihydroxydiphenyl sulfone and an aldehyde;

iii) sulfonated dihydroxy diphenyl sulfone and an aldehyde; and

iv) mixtures of i), ii) and iii); and

b) a semi-soluble methacrylic acid polymer of having a weight average molecular weight of 100,000 to 500,000 and a number average molecular weight of 50,000 to 100,000, said methacrylic acid polymer being semi-soluble such that it is rendered resistant to wet cleaning processes thereby producing durable stain resistance, while providing initial stain resistance prior to wet cleaning of the substrate.

2. A formulation according to claim 1, wherein said resin is a condensation product of 4,4-dihydroxydiphenylsulfone, sulfonated 4,4-dihydroxydiphenylsulfone and an aldehyde.

3. A formulation according to claim 1, wherein said resin is a condensation product of phenol sulfonic acid, 4,4-dihydroxy diphenyl sulfone and an aldehyde.

4. A formulation according to claim 1, wherein said resin is a condensation product of sulfonated ~~3,3'~~ 4,4'-dihydroxydiphenylsulfone and an aldehyde.

5. A formulation according to claim 1, wherein said weight average molecular weight is 100,000 to 500,000 and said number average molecular weight is 50,000 to 100,000.

6. A formulation according to claim 5, wherein said aqueous vehicle further contains a semi-soluble or insoluble ethylmethacrylate polymer.

7. A formulation according to claim 5, wherein said aqueous vehicle further contains an anionic or non-ionic fluorochemical.

8. A formulation according to claim 6 wherein said ethylmethacrylate polymer has a weight average molecular weight of 100,000 to 500,000; and a number average molecular weight of 25,000 to 100,000.

9. A formulation according to claim 1, additionally containing a bleached aldehyde condensate of a naphthalene sulfonic acid.

10. An aqueous formulation according to claim 6, wherein said ethyl methacrylate polymer has a weight average molecular weight of 100,000 to 500,000 and a number average molecular weight of 25,000 to 100,000, said ethyl methacrylate polymer being semi-soluble or insoluble such that it is rendered resistant to wet cleaning processes thereby.

* * * * *

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acrylic acid polymer of high weight average molecular weight and high number average molecular weight.

DETAILED DESCRIPTION OF THE INVENTION

i) Condensation Resin

The invention employs a semi-bleached to bleached sulfonated aromatic condensation resin.

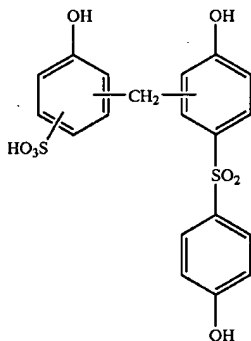
The condensation resin may be a condensation product of phenol sulfonic acid, dihydroxy diphenyl sulfone and an aldehyde; or a sulfonated condensation product of dihydroxy phenyl sulfone, sulfonated dihydroxy phenyl sulfone and an aldehyde; or a sulfonated dihydroxy phenyl sulfone and an aldehyde.

The aldehyde is suitably formaldehyde or a lower alkyl aldehyde in which the lower alkyl moiety has 1 to 6, preferably 1 to 4 carbon atoms.

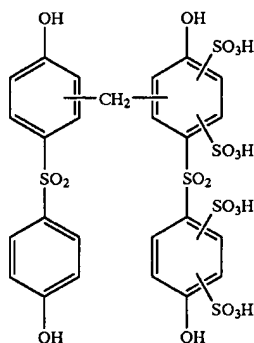
The condensation may be carried out in acid or alkaline media.

The dihydroxydiphenyl sulfone may, in particular, be 4,4-dihydroxyphenyl sulfone; and similarly the sulfonated dihydroxydiphenyl sulfone, may be sulfonated 4,4-dihydroxyphenyl sulfone.

A unit of the condensation product of phenol sulfonic acid, 4,4-dihydroxy diphenylsulfone and formaldehyde may be represented by formula (I):



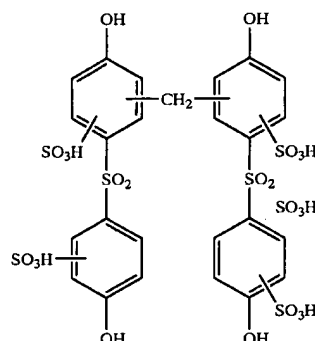
A typical unit of the condensation product of 4,4-dihydroxydiphenylsulfone, sulfonated 4,4-dihydroxydiphenylsulfone and formaldehyde may be represented by formula (II):



The sulfonated 4,4-dihydroxydiphenylsulfone employed in the above unit is double sulfonated, by which is meant that on average each phenyl of the 4,4-dihydroxydiphenylsulfone has two sulfonate or sulfonic acid substituents.

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A typical unit of the condensation product of sulfonated 4,4-dihydroxydiphenylsulfone and formaldehyde may be represented by the formula (III):



The sulfonic acid groups increase the solubility of the condensation products.

The condensation resin may comprise one or more of the condensation resins of the afore-mentioned three classes such as represented by (I), (II) and (III).

Optionally the semi-bleached to bleached condensation resin of the invention may be employed in conjunction with a bleached aldehyde condensate of a sulfonated naphthalene, such as described in U.S. patent application Ser. No. 09/410, 082, filed Oct. 1, 1999, Y. Elgarhy et al. In particular, such condensates are condensates of a naphthalene sulfonic acid, for example, a mono-, di, or tri-sulfonic acid, such as naphthalene-2-monosulfonic acids, an aldehyde especially formaldehyde and a dihydroxydiphenyl sulfone, for example, 4,4-dihydroxydiphenylsulfone. The condensation may be in acid or alkaline media.

The above condensation products are bleached or semi-bleached to remove or reduce colour which causes the yellowing of nylon fibres, by techniques known in the art. By way of example the condensate may be bleached by addition of 0.1 to 4%, by weight, sodium or zinc formaldehyde sulfoxylate for a period of 20 to 90 minutes at a temperature below 100° C. This typically reduces colour by 20 to 80% and prevents further discoloration. The bleaching or partial stripping of color is preferably carried out at a pH higher than 7 when sodium formaldehyde sulfoxylate is employed, and at a pH lower than 7 when zinc formaldehyde sulfoxylate is employed, and at a temperature of 50° C. or higher. The reference to bleaching, stripping or partially removing color herein refers to removal of the part of the color in the condensate which causes the yellowing of the fibers, bleaching, stripping or partial removal of color results in the condensate becoming lighter in color.

The degree of bleaching or stripping depends upon the condensate and whether it is condensed at acid or alkaline media; and also depends on the stripping agent whether it is sodium or zinc, formaldehyde sulfoxylate, and the bleaching or stripping conditions, for example, pH.

The time and the temperature are important factors and the percentage of stripping of the color varies, according to the stripping conditions, between 20 to 80%.

After the bleaching or stripping, even if the color is still dark, it is observed that yellowing of the fibers does not occur.

The amounts of the semi-bleached to bleached sulfonated aromatic condensation resin and the optional bleached aldehyde condensate of a sulfonated naphthalene deposited from an aqueous formulation on the polyamide substrate is depen-